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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,564	09/01/2006	Oskar Pammer	P/3240-116	6227

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EXAMINER	
SLIFKA, COLIN W	

ART UNIT	PAPER NUMBER
1793	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/591,564	PAMMER ET AL.	
	Examiner	Art Unit	
	COLIN W. SLIFKA	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 February 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4,5 and 7-21* is/are pending in the application.

4a) Of the above claim(s) *7-16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,5 and 17-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 September 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 4, 17, 18, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu et al (JP 60052533 A) in view of Kurosawa et al (JP 03249138 A), either Druet et al (DE 2715423 C) or Morishita (JP 10-060550 A), Fujimoto et al (US 4,871,393), and Feichtner et al (US 4,410,355).

Komatsu clearly teaches that iron ore powder, lime powder, and coke powder are mixed in a primary mixer and that returned ore is then added to this material and then made into pellets and sintered (Derwent abstract).

Komatsu does not specifically teach that some of the returned sintered material is added alone "within a longitudinal extent of a granulation drum" during the granulation process. Komatsu also does not teach that the returned sintered material is added in two different locations, such as both before the granulation drum and within the granulation drum, as stated in instant claim 1.

Druet, in a similar invention of sintering ore, shows sintered material being delivered directly back into the granulation device (Figure 1).

Morishita, in a similar invention of sintering ore, shows return fines fed directly back to the discharge end of the drum mixer (Figure 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to produce a sintered ore of Komatsu by feeding a portion of the returned

sintered material directly back into the granulation device, which is a commonly known practice as can be seen by Druet and Morishita.

Kurosawa, in a similar invention, teaches that some of the returned sintered material may be brought back to both before the first mixer as well as just before the secondary pelletizing mixer (Figure 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to produce a sintered ore of Komatsu by feeding back portions of the sintered ore to multiple different locations as taught by Kurosawa, such as before the granulation device, which is taught by Komatsu and Kurosawa, and directly into the granulation device, which is taught by Druet and Morishita. Said "multiple different locations" can be multiple feedback locations at the same time within a process, such as in instant claim 1, as well as singular feedback points, such as in claim 17.

Furthermore, the act of adding returned sintered material before the granulation device and within the longitudinal extent of the granulation drum is not patentably distinguishable, especially not at face value. As in Komatsu and Kurosawa, the returned material apparently is at least added back to the line conveying material from the first mixer to the granulation device. As the material is just added to such a line, with no additional equipment to move the material around, it can only be assumed that the returned material sits in place with the "pre-sintered" material, with no physical mixing or chemical reactions taking place. Under such a presumption—one which must be made—there is no substantial difference whether the returned material is added at any point from just after the "mixing" to just before the "granulation." Ultimately for this

point, the conveyer line between said “mixing" step and said “granulation” step could be 5 feet or 5 miles and the point where returned material is added would not matter because it is a line in which no process takes place…it is a void in the system and only a means to transport materials from one step to another. That said, there is no difference between any point between the two steps, and the first point of entry into the granulation device. To illustrate this point exactly, consider a conveyor belt AB to transport a "mixed" material from the "mixing" device to the "granulation" device. The conveyor belt AB begins at the end of the "mixing" device, at point A, and ends at the beginning of the “granulation” device, at point B. As stated above, any returned material added at any point between A and B will have the same effect, as there are no opposing forces to physically or chemically affect the material. There is a second conveyor belt C which travels just above and parallel to belt AB, leading into the "granulation" device. Any physical interactions will only happen in the "granulation" device. One should be able to gather that this process in which the original raw material is separated from the returned material until the point of entry within the granulation device (within the “longitudinal extent" of the granulation device) is essentially the same as if the returned material had been added to belt AB at point B, or any point between A and B for that matter. Such is not a patentable distinction because the same granulation is achieved.

Regarding a “longitudinal extent of a granulation drum," the longitudinal extent of a granulation drum is considered to be anywhere within the walls. No matter how the material is added, from the side, top, middle, bottom, etc., the material will have been added "within the longitudinal extent" of the granulation drum.

Komatsu does not specifically teach the use of a "granulation drum."

Fujimoto, in a similar process of feeding sintering raw ore mix, teaches that various raw mixes are mixed and granulated by a drum mixer (col. 1, lines 30-32).

It is very possible that the secondary mixer of Komatsu was a “granulation drum,” and it would have been obvious to one of ordinary skill in the art at the time of the invention to use a granulation drum mixer as taught by Fujimoto in the process of Komatsu, as both pieces of equipment additionally mix and granulate the materials of similar inventions.

With respect to the adding of the returned material to the granulation drum “during” the granulation process, it is considered that the process of Komatsu is a continuous process. Komatsu does not specifically state this, however.

Feichtner, in a similar process for controlling a pelletizing plant for fine-grained ores, teaches that with certain control processes, operating conditions can scarcely be optimized with respect to the throughput, and furthermore, such plants can only with great difficulties be started after a shut-down (col. 2, lines 3-8). It is considered that it is common practice in these processes to operate continuously, and likewise it would have been obvious to one of ordinary skill in the art at the time of the invention that the returned materials of Komatsu, Kurosawa, Druet, and Morishita would be added to the granulation drum during the granulation process.

With respect to the mixing of amended claim 1, Komatsu does not specifically describe the physical aspects of the mixing process. Regardless, it is well known in the art that mixing can take place with a "mixing tool," where movement takes place

between the container and the mixing tool. Additionally, it would have been obvious for the mixing step to be carried out in a manner that would provide desired results, and "intensive" mixing would be subject to the process specifications.

Regarding claims 4 and 18, Komatsu and Kurosawa teach that the returned sintered material can be added to the main "mixture" before the secondary mixer, and Druet and Morishita teach that the returned material can be added directly into the pelletizer.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the returned sintered material at any point or points, without limiting the feed to a fixed position, between after the primary mixer to any portion of the secondary mixer, with respect to the invention of Komatsu for example. Again, Morishita specifically teaches that the returned material is added to the end of the granulation device.

Regarding claims 20 and 21, the addition of the return fines within the longitudinal extent of the granulation drum before "completion of granules of mixture" would have been obvious as the "completion of granules of mixture" occurs at the end of the granulation process. If the return fines were added after the granulation process has completed, there would be no point to add said fines to the granulation drum.

Claims 5 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu et al (JP 60052533 A) in view of Kurosawa et al (JP 03249138 A), either Druet et al (DE 2715423 C) or Morishita (JP 10-060550 A), Fujimoto et al (US 4,871,393), and

Feichtner et al (US 4,410,355) as applied to claims 1 and 17 above, and further in view of Noda et al (US 5,009,707).

Komatsu as combined with Kurosawa and either Druet or Morishita teach a process or returning sintered material to one or multiple locations before or directly into a granulation device, as shown above.

Komatsu does not specifically teach the particle size of the forming granules when the fuel is added.

Noda, in a similar invention of manufacturing agglomerates of sintered pellets, clearly teaches that agglomerates of less than 25 mm in particle size are charged into a secondary disk pelletizer. Solid fuel is added to the secondary disk pelletizer and primary agglomerates are coated with the solid fuel whereby pellets of 5-10 mm in particle size are manufactured. Powdery coke, char, pulverized coal or the like is used as the solid fuel (col. 3, lines 29-35).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the fuel to the material-to-be-sintered of Komatsu when the pellets are between 5-10 mm, as taught by Noda, because it is known in the art that this is a desirable particle range, as they are both similar processes and would therefore require similar sized particles.

Response to Arguments

The amendments to the claims have obviated the previous 35 U.S.C. 112 second paragraph rejections.

Regarding the declaration submitted February 5, 2010, said document declares that the addition of return fines within a longitudinal extent of the granulation drum produces a better granulation product than an addition of such returned sintered material to the mixture before entering said drum. If the addition directly to the drum is superior to the addition before the drum, Examiner does not understand why then do claims 1 and 20 only require that "some" of the returned sintered material is added to the mixture prior to said mixture entering the drum. Additionally, "some" is a broad term. The declaration of better granulation is not commensurate in scope with the claim where broadly "some" is added within the longitudinal extent of the drum. Further, there is no comparative data that adding some to the mixture and adding some alone to the drum is better than all returned sintered material added to the mixture. Regardless, the concept of adding one material to another during the process of mixing/granulating is extremely well known across an almost limitless number of various arts. For example, continuous stirred-tank reactors constantly mix materials while new materials are added.

Applicant's arguments filed December 1, 2009 have been fully considered but they are not persuasive. Applicant argues that Druet teaches the recycled fines are returned to a single chamber in which comparable steps of mixing and granulation occur (comparable to the definitions of mixing and granulation of the instant invention). Applicant agues that because the instant claims require separate containers for each of

mixing and granulation, and also because the instant claims require that the return fines be added after the ore has been mixed, Druet is not properly applicable prior art. Examiner respectfully disagrees because Komatsu already teaches separate containers for mixing and granulation. Druet is relied upon for the teaching of adding the return fines directly into a granulation container, which is in fact what occurs within the Druet reference regardless of other processes occurring within that same container. It should also be noted that in the granulation drum of the instant claims mixing of the materials inherently occurs.

Applicant argues that Morishita does not teach returned sintered material, but rather returned ore fines prior to sintering, and therefore is not applicable prior art. Examiner respectfully disagrees because Komatsu already teaches returning sintered fines. Morishita is relied upon for the teaching of adding return fines directly into a granulation container, and it is the position of the Examiner that one of ordinary skill in the are would have been enabled to return the sintered material of Komatsu directly back into the granulation drum, and Morishita, in a similar process, shows returned fines being added directly to granulation drum. It is not such a great distinction between the sintered fines of Komatsu and the unsintered fines of Morishita that doing so would not be obvious.

Applicant's arguments with respect to the Kurosawa reference stem from Kurosawa teaching that the sintered ore is returned **before** a secondary mixer 4. However, as seen in the Kurosawa reference, that the sintered ore is not returned

before mixer 4 but is actually returned **to** said mixer.

The minus sieve below these sizes is supplied by a conveyor 19 to the secondary mixer 4

Furthermore, Kurosawa is relied upon for the teaching of adding return fines to more than one physical location during the process. As Komatsu already teaches the return fines being added prior to the granulation drum and both Druet and Morishita teaching that the return fines may be added directly to the drum, it would have been obvious to utilize both locations during the process, as stated above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to COLIN W. SLIFKA whose telephone number is

(571)270-5830. The examiner can normally be reached on Monday-Thursday, 10:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Melvin Curtis Mayes can be reached on 571-272-1234. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/COLIN W SLIFKA/
Examiner, Art Unit 1793

February 15, 2010

/Melvin Curtis Mayes/
Supervisory Patent Examiner, Art Unit 1793